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Study of D^{+}\toK_{S}^{0}K^{*}(892)^{+} in D^{+}\toK_{S}^{0}K_{S}^{0}\pi^{+}

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By analyzing the e^+e^- collision data sample with an integrated luminosity of 8.0 fb^{-1} collected with the BESIII detector at the center-of-mass energy of 3.773 GeV, we perform an amplitude analysis of $D^+ \to K^0_S K^0_S \pi^+$ for the first time. Our amplitude model contains intermediate decays $D^+ \to K^0_S K^*(892)^+$ and $D^+ \to K^0_S (K^0_S \pi^+)_{\rm s-wave}$. The dominant intermediate process is $D^+ \to K^0_S K^*(892)^+$, with a fit fraction of $(97.8 \pm 1.0_{\rm stat.} \pm 0.4_{\rm syst.})\%$, where the first uncertainty is statistical and the second uncertainty is systematic. In addition, with the detection efficiency obtained from the updated generic MC samples generated based on the amplitude analysis results, we obtain the absolute branching fraction of $\mathcal{B}(D^+ \to K^0_S K^0_S \pi^+) = (2.97 \pm 0.09_{\rm stat.} \pm 0.05_{\rm syst.}) \times 10^{-3}$. Using the branching fraction we measured, we obtain the branching fraction $\mathcal{B}(D^+ \to K^0_S K^*(892)^+) = (8.72 \pm 0.28_{\rm stat.} \pm 0.15_{\rm syst.}) \times 10^{-3}$.

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